

INDEX

Note.—Illustrated articles are marked with an asterisk (*). Look for the general subject rather than the supposed specific titles of articles. Thus: "Aeronautics," "Automobiles," "Meteorology," "Warfare," etc., will give related articles much more quickly than by reference to the title.

- ADVERTISING CARDS, ANIMATED** *648
- AERONAUTICS.** See also NATIONAL DEFENSE and WAR, THE EUROPEAN ACCIDENTS.
- Deploable accident. 485
 - Giant air yacht wrecked. 117
 - Quaker accident. 117
- CONSTRUCTION.**
- Aeroplane for sportman. 329
 - Autoplane, the. 303
 - Lateral balance device. 369
 - Wings, rotating disk. 109
- DIRIGIBLES.**
- Navy dirigible, non-rigid. *617
 - Super-Zeppelin, another. 117
 - Zeppelin, the unwieldy. 369
- EQUIPMENT.**
- Compass visible at night. *156
 - Fighting plane accessories. 505
 - Lightening aviator's work. *156
 - Stabilizer, electric. 437
- FLYING BOATS.**
- Folding-wing seaplane. *124
 - Hammond seaplane. 57
 - Seaplane loops-the-loop. 615
- GENERAL.**
- Aeroplanes after the war. 615
 - Aeroplanes, study of the. 450
 - Aviation in the Coast Guard. 117
 - Changing automobile bodies. *645
 - Flamingo for flying field. 257
 - Fourteen years of the aeroplane. 196
 - Future of aviation. 615
 - Hot men in the air. 376
 - Increase of production. 376
 - Pan-American Exposition. 184
 - Postal service, aerial. 437
 - Propellers, copper-plating. *393
 - Retrospect of 1916. 6
 - Sectional automobile bodies. *645
 - Weather bureau and airmen. *342
- MILITARY.**
- Aerial torpedo. *136
 - Aeroplane and submarine. 441
 - Aeroplane, huge. 615
 - Aeroplanes in United States. 217
 - Aeroplane vs. observation balloon. *104
 - American machines abroad. 485
 - American supremacy of the air. *641
 - Anti-Zep" aeroplanes. 76
 - Barlow aerial torpedo. 57
 - Hatfield planes replace soldiers. 615
 - Breaking in recruits. 309
 - Britain's bid for control of air. *422, *470, *544
 - British air fleet important. 57
 - British flying corps, strength of. 57
 - Canada's aerial armada. 485
 - Coast defenses, our aerial. *228
 - Department of Aeronautics. 575
 - Fighting U-boats from air. 489
 - Flights of U. S. Signal Corps. 217
 - Flying field for War Department. 117
 - French aeroplanes for Army. 517
 - German line can be broken. 614
 - Giant searchlight, test of. 117
 - Gun fires through hollow shaft. 615
 - Has Germany command of the air? 57
 - Japanese military maneuvers. 217
 - Kite balloons for Navy. 37
 - Lighthouse for our airmen. *423
 - Light landing, Germany. 117
 - Our eagle learns to fly. *170
 - Scenic effects, protective. 485
 - Seaplane, speeding up. *579
 - Submarine as mother ship. 485
 - Wage in air services. 485
 - Year's destruction, aeroplanes. 485
 - Zeppelins for Navy. 77
- MOTORS.**
- American-made Gnome. 217, *374
 - Rotary and radial engines. 277
 - Steam rotary motor. 369
- AGRICULTURE.**
- Agriculture in war time. 391
 - Baby tractor of great power. *323
 - Canadian bulletin. 437
 - Cattle, contagious abortion. 169
 - Cattle food; vegetable ivory. 104
 - Conservation, agricultural. 120
 - Dairy preparedness. *620
 - Electrical sunshine for farms. 437
 - Everglades, draining the. 61
 - Experiment station, Venezuela. 480
 - Farmer can win the war. 409
 - Farmer's low production. 261
 - Farming as spare-time occupation. 542
 - Fertilizer, question of. 575
 - Fertilizers and soil microbes. 129
 - Fertilizers, distribution of. 469
 - Fertilizer supplies, future. 449
 - Foot-and-mouth disease. 269
 - Garden movement suggestion. 619
 - Gardens injured by street sweepings. 519
 - Germination of French seeds. 314
 - Graphic summary, world agriculture. 485
 - Hog-cholera serum, drying. 139
 - Horticultural need. 619
 - Increasing production. 691
 - Lime, use of. 485
 - Manganese as fertilizer. 135
 - Melon fly menace. 387
 - Milk, the mechanical. 197
 - Pilew, unique type of. 177
 - Potatoes as snailage. 77
 - Seed sowing, novel. *474
 - Soil surveys, United States. 65
 - Spading machine, small. *204
 - Sugar-belt labor-saving. *623
 - Tractors and the war. 600
 - Tractors, farm. *86, *285, *323, 341, *349, *388, 437
 - Tuberculosis in live stock. 151
 - Wheat, increasing yield of. 466
- ALLOY, NEW UNUSUAL.** 624
- ALLOYS, HIGH-SPEED STEEL.** 278
- ALUMINUM in Germany.** 149
- ANIMALS.**
- Armado farm. 460
 - Cats, falling from. 341
 - Cattle poisoned by oaks. 98
 - Hare, "black Siberian". 257
 - Horse fountains, safety first. 96
 - Horses, Philippine. 397
 - Jungle farm for zoo boarders. *115
 - Metabolism of cold-blooded. 349
 - Novel pets: how to keep them. *300
 - Rabies among wild animals. 17
 - Reindeer, arctic, and war. 259
 - Science joins hands with art. *154
 - Snakes at close range. *449
 - Squirrels, American gray. 371
 - White mice, rearing. 399
 - Wild life protection, Canada. 387
- ARCHEOLOGY.**
- Aboriginal remains. 169
 - Maya remains, important. 354
 - Survey, archeological. 523
- ARCTIC EXPLORATION.** See EXPLORATION.
- ASPHALTIC SAND.** *326
- ASTRONOMY.**
- COMETS.
 - Encke's periodic comet. 57
 - Mellish's comet. 355, 373, 448, 554
 - Meteors from comet. 149
 - Schaumasse's comet. 465
 - Three new comets. 7
 - Wolf's Comet. 646
- EARTH.**
- Sun, earth and the. *64
- GENERAL.**
- Civil twilight. 369
 - Heavens month by month. *128, *294, *347, *448, *554, *646
 - Heavens, stereoscopic views of. 57
 - Meetings at observatories. 149
 - Optical phenomenon, novel. 301
 - Research, needs of. 369
 - Retrospect of 1916. 6
 - Sun and moon tables. 197
 - Ultra-violet light from sun. 197
 - Winter night, bright. 465
- METEORS.**
- Brilliant meteor. 543
 - Helical meteor trail. 149
 - Photographic apparatus. 369
- MOON.**
- Phases and conjunctions. *128, *264, 355, *448, *554, *646
- OBSERVATORIES.**
- Harvard College observatory. 197
- PLANETS.**
- Internal heat of planets. 353
 - Jupiter, ninth satellite of. 59
 - Jupiter, shadows of. 489
 - Jupiter's ninth satellite. 543
 - Jupiter's smallest satellite. *448
 - Mars from Jamaica. 615
 - Martian snow-caps. 257
 - Planets, the. *64, *128, *264, *347, *448, *554, *646
 - Seeking transneptunian planet. 197
 - Uranus, rotation period of. 543
- STARS.**
- Barnard's "runaway" star. 257
 - Colors of double stars. 543
 - Double star measures. 369
 - Draper catalogue, new. 615
 - Faintest known variable. 77
 - Giant stars. *534
 - Harvard Observatory's work. 465
 - Magnitudes, estimating. 543
 - Marching by the stars. 615
 - Milky Way, photographs of. 465
 - Mira Ceti, observations of. 149
 - Morning and evening stars, 1917. *94
 - Nebula N. G. C. 2261. 257
 - Nebula, remarkable variable. 57
 - Parallax of 61 Cygni. 303
 - Photographing in daylight. 369
 - Radial velocities. 465
 - Red stars, intensely. 615
 - Star colors. 197
 - Starlight and human eye. *347
 - Stellar parallaxes. 303
 - Variables, interest in. 149
- SUN.**
- Corona and prominences. 95
 - Observations in Kashmir. 615
 - Quartz Spectrograph. 646
 - Rotation measurements. 57
 - Solar-constant studies. 369
 - Sun dogs. 543
 - Sunspots and prominences. 615
 - Sunspot spectrum: new map. 448
 - Total eclipse of 1918. 257
- TELESCOPES.**
- Argentina, big telescope for. 139
 - Canada's great telescope. 543
 - Grinding reflectors. 523
 - Reflector, 100-inch. 543
- AUTOMOBILES.**
- ACCESSORIES AND RUNDRIES.
 - Accessories, new ideas in. *20, *21
 - Brake, vacuum operated. *23
 - Gear box, helical toothed. 341
 - Lubrication failures. 371
 - Measuring pump, elusive. 371
 - Recording performance. 371
 - Vaporizing gasoline today. 341
- FUELS.**
- Fuel question. 169
- GENERAL.**
- Advertising, automobile. 371
 - Ancestors of the automobile. *8
 - Automobile industry. *11
 - Automotive engineers, the. 437
 - Brakes, attention to. 341
 - Carbon, methods of attacking. 323
 - Carburetor, playing with. 277
 - Cost of maintenance. 341
 - Electric vehicle, Germany. 615
 - Exhaust gases. 261, 469
 - Garage, a help-yourself. 161
 - Gases, poisonous. 341
 - Graphite in bearings. 277
 - Guarantees. 169
 - Heavy cars on city streets. 571
 - Juvenile builder of cars. *65
 - Orphan cars. 571
 - Price list, 1917 cars. 30
 - Production, economical. 169
 - Spark plug trouble. 169
 - Timely "don't" for motorists. 116
- MOTORS.**
- Engine, trouble, elusive. 571
- FLUOR CARB.**
- Automobile's dream. 61
 - Design, trend of 1917. *12
 - Economy claims. 437
 - Electric-and-gasoline drive. *23
 - Matter of fashion. 169
 - Motoring's viewpoint. 11
 - Simple automobile, the. 571
 - Stem car, the. 81, 121
- TRUCKS.**
- Blow-out, preventing. 277
 - "Breaker strip," the. 437
 - Economy in tires. 169
 - Steel wire tires for trucks. 23
 - Tire filler, resilient. 377
- TRACTORS.**
- Baby tractor of great power. *323
 - Ball-bearing tractor. *238
 - Car of all work. *86
 - Creming grip tractor, new. *286
 - Delivering by tractor. *437
 - Electric tractor. *286
 - Farm tractor, developing. 437
 - Farm tractor opportunity. 437
 - Farm tractors, opening for. 341
 - Motor tractors and trailers. *494
 - "Tank" war. *59, *351, *423
 - Tractor for ice and snow. *376
 - Tractor that drives like horse. *498
 - Tractor-trailer ore train. *86
 - War, tractors and the. 600
- TRUCKS.**
- A matter of motor trucks. *523
 - Army requirements. 179
 - Army trucks after war. *495
 - Circus, motorized. *600
 - Combination army truck. *600
 - Cooperation of manufacturers. 390
- LOADING AND UNLOADING.** *400
- Motor-driven commercial vehicle. *86, *170, *286, *397, *498, *600
 - Motor traction in war. *486
 - Motor truck of 1917. *18
 - Petrograd-Archangel service. 136
 - Power plant, removable. *179
 - Systematic inspection, etc. *408
 - Trucks as steam shovel auxiliaries. 397
 - Tracks in building construction. 460
- USES OF.**
- Aero sleigh for Alaskan mail. 286
 - Ambulance, U. S. Army. *179
 - Pay-car body, bandit-proof. *600
 - Snow plow, unique. 286
- AVIATION.** See AERONAUTICS.
- AWARDS.**
- Bruce gold medal. 543
 - Edison medal. 519
 - Scientific American medal. 519
- BALLOONS.** See AERONAUTICS.
- BEER, HOW MADE.** *339
- BIOGRAPHY, INCLUDING OBITUARIES.**
- Dewey. 96
 - Gathmann, Louis. 591
 - McCormick, R. H. 301
 - Veeder, Dr. M. A. 387
 - Zeppelin, Ferdinand von. 277
- BIOLOGY.**
- Ethno-chemistry. 100
 - Human embryos, collecting. 341
 - Laboratory, new biological. 117
 - Marine biology in Sicily. 217
 - Survey, progress of U. S. 77
- BIRDS.**
- Bird reservations. 117
 - Canaries: color feeding. 277
 - Chicks, embryonic activity. 527
 - North American birds, new. 417
- BIRTH OF A NEW INDUSTRY.** *326
- BITUMEN, CHEMISTRY OF.** 504
- BLAST FURNACE, NEW WAY TO TAP.** *389
- BLOWER, PORTABLE ELECTRIC.** 615
- BOATS.** See MERCHANT MARINE and WARSHIPS.
- BOAT THAT SAILS ON LAND OR ICE.** *204
- BODY OUTLINE RECORDER.** *206
- BOOTS, NEW METHOD OF SOLING.** 117
- BOXES THAT STOP THEFT.** 387
- BRIDGES.**
- Concrete bridge, Iowa. *17
 - Engineering, military. *442
 - Great work well done. 368
 - Moving a big bridge. *55, *79
 - Progress in Switzerland. 295
 - Railroad bridge of grass. *124
- BRONZE STATUARY.** 417
- BUILDING CONSTRUCTION.**
- Concrete, boards of. *555
 - Girder clip, universal. *354
 - Heat-insulating efficiency. 553
 - Hollow tiles, strength of. 591, 604
 - Marble, build it in. 518
 - Model houses, Philippines. 485
 - Reconstruction materials, French. 183
 - Smoke stack construction. 301
 - Sub-surface data, New York. 343
 - Timbers, decay in. 197
- BUTTER DISPENSING DEVICE.** 417
- CALENDAR, GREGORIAN, TURKEY.** 169
- CANALS.** See also PANAMA CANAL.
- World's busiest waterway. *202
- CARBIDE, EUROPE'S SUPPLY.** 97
- CASTING FURNACE, SMALL.** *279
- CASTING, LARGEST STEEL PIPE.** *553
- CELLULOSE CEMENT, NEW.** 308
- CEMENT, PAINTED.** 152
- CEMENT, SEARCH FOR IDEAL.** 176
- CHAIN, LENGTHENING LIFE OF.** 467
- CHAIR ADJUSTABLE TO SPINE.** *378
- CHAIR, ELECTRIC MOTOR.** 571
- CHANGE, LOOSE, MACHINE.** *624
- CHEMISTRY.**
- Developments, recent. 441, 489
 - Laundry work technology. *445
 - Nothing new under the sun. 357
 - Reagent for sea chlorine. 136
 - What I can do for my country. 352
 - Women chemists in wartime. *343
- CIGAR WITH OWN MATCH.** 543
- CIVIL ENGINEERING.** See BRIDGES, ENGINEERING, ETC.
- CLOTHES FROM PEAT FIBER.** 353
- CLOTH, NETTLE FIBERS FOR.** 110
- COAL. See FUELS, AND MINES AND MINING.**
- COAL TAR AND ASPHALT.** 483
- COAL UNLOADING MACHINE.** *426
- COAST AND GEODETIC SURVEY.**
- Peevishness in Coast Survey. 139
 - Wire drag, development of. 117
- COBBLESTONE ARCH, MOVING.** *205
- COFFEE GRINDER, ELECTRIC.** *106
- COLOR-BLINDNESS TESTS.** 217
- COMB, ELECTRIC, AS HAIR DRYER.** 519
- COMETS.** See ASTRONOMY.
- COMPASSES, GYRO.** *255
- CONCRETE.**
- "Boards" of concrete. *577
 - Concrete-surface, electric. 519
 - Durability in alkali waters. 492
 - Pouring in zero weather. *17
 - Pulley, concrete. 617
 - Railroad, concreting a. *258
- COPPER, MELTING, IN IRON LADLES.** 406
- CORRESPONDENCE.** 11, 61, 81, 121, 173, 201, 153, 261, *305, *325, 373, 421, 441, 469, 489, 523, 547, 575, 619.
- COTTON.**
- Beet as a substitute. 575
 - Cotton goods, packing. 97
 - Cotton in French colonies. 285
 - Fumigating foreign cotton. *255
- CRIPPLE, WORK FOR.** 638
- CUTTER, QUICK-OPERATING.** *158
- DAM THAT NEVER OVERFLOWS.** *17
- DAYLIGHT SAVING.** 300, 301, 386, 484, 519
- DEAF, "EARS" FOR THE.** *330
- DESKS, SCHOOL, MADE NEW.** *378
- DISEASES.** See MEDICINE AND SURGERY.
- DIVER'S LOAD, LIGHTENING.** *95
- DIVINING-ROD.** 464
- DOLLS' HEADS, DRYING.** 97
- DOUM NUTS OF COMMERCE.** *129
- DYESTUFFS.**
- Coal tar dyestuffs. 509
 - Dye industry. 570
- EARTH.** See ASTRONOMY, GEOLOGY, ETC.
- EARTHQUAKES.** See GEOLOGY.
- EDUCATION.**
- Commercial science course. 415
 - Cooperation with business men. 458
 - Illiteracy in United States. 217
- EGGS BY ELECTRIC LIGHT.** 305
- ELECTRICITY.**
- ELECTRIC LIGHT.
 - Arc, alternating current. 217
 - Bicycle lamp, dual-function. 77
 - Electric lights, Mammoth Cave. *59
 - Flame carbon arc lamps. 465
 - Flashlamp battery demand. 519
 - Flood-lighting for protection. 465
 - Industrial lighting. 117
 - Lamp still fit for service. 437
 - London improvement. 341
 - Luminous efficiency of arc. 321
 - Making change by flashlight. *425
 - Pilot lamp. 417
 - Pocket lamp with own power plant. 197
- MISCELLANEOUS.**
- American goods in Porto Rico. 417
 - Bills, many are high. 543
 - Bird-grounded lines. 197
 - Cable messages by telephone. 341
 - Commutators, iron. 615
 - Concessions in Panama. 341
 - Conduit in New Zealand. 417
 - Current consumption and dust. 571
 - Current rectifier, new. 577
 - Dust, precipitation of. 301
 - Electricity prevents pipes freezing. 417
 - Electrolysis mitigation. 257
 - Electrolysis, overcoming. 97
 - Electromagnetic phenomenon. 217
 - Foreign departures. 543
 - Fire logs, electrical. 77
 - Geissler tube as cable tester. 217
 - Heating pad, new type. 197
 - High-frequency vibrations. 117
 - Hydroelectric plants in South. 437
 - Hydro-electric power, Spain. 77
 - Interrupter, high-speed. 543
 - Magnetic uniformity. 97
 - Magnet industry, England. 217
 - Motor, largest, yet built. 257
 - National electric safety code. 417
 - Portland, French. 571
 - New York Electrical Society. 97
 - Oscillation, laboratory. *512
 - Perforated, French. 571
 - Pull socket chain insulators. 77
 - Retrospect of 1916. 6
 - Rheostat, new type. *623
 - Rheostat, novel liquid. 465
 - Rheostats, two, in one. 77
 - Scrubbing machine. 147
 - Steel furnace, development of. 417
 - Steel transmission cables. 257
 - Submarine cable, high tension. 349
 - Swiss electrical industry. 197
 - Tungsten as battery element. 149
 - Weston normal cell. 321
 - Wind, electricity from the. 197
 - Women, electrical course for. 197
- RAILWAYS.**
- American cars, Barcelona. 257
 - Door operating mechanism. *5
 - Electric traction, Buenos Ayres. 97
 - Insulator for high tension. 465
 - Intersection, new shockless. 417
 - Italian electric railways. 571
 - Rail wear-gauge, novel. *66
- TELEPHONES.**
- Demand for telephone, Japan. 217
 - Making telephone more efficient. 519
 - National telephone, Panama. 225
 - Right of way. 437
 - Submarine cable, heaviest. *75, 261
 - Transmitter, improved. 341
 - Wireless telephony, Chicago. 97
- ELECTRO-PLATING, PROTECTING.** 526
- ELEVATOR, PORTABLE.** *599
- ENGINE, BABY GASOLINE.** *309
- ENGINEERING.**
- Retrospect of 1916. 6
 - Women in engineering. 77
- EXPLORATION.**
- Crocker Land expedition. 571, 591
- EXPLOSIVES.**
- Chemical developments, new. 391
 - Greek fire of the ancients. 137
 - India's war flower. 531
 - Kapok for explosives. 133
 - Sodium nitrate: reserve supply. 149
- EYE, NEW ARTIFICIAL.** *353
- FILTER PAPER, AMERICAN.** 465
- FIRES AND FIRE PREVENTION.**
- See also SAFETY AND TREES AND FORE-TRY.
 - Forest-fire losses. 405
 - Hose, marine fire-fighting. *624
 - How we burn up our property. 589
 - Natural gas blows fire whistle. 502
 - Searchlight, smoke-piercing. *466
 - Studies at Bureau of Standards. 255
- FISH AND FISHERIES.**
- Bureau, quarters needed for. 437
 - Disasters due to fresh water. 172
 - Halibut, "mushy". 117
 - More fish. 489
 - School of fisheries. 301
 - Trawling simplified. 205
- FLAGS FOR WARSHIPS, MAKING.** 521
- FLOOR-POLISHER, ELECTRIC.** 321
- FLY-WHEEL BURSTS, WHEN A.** *65
- FOG.** See METEOROLOGY.
- FOOD.**
- Bread from unground grain. 17
 - Bread made from hay. 102
 - Bread trust, Germany's. *102
 - Calorimetry: standard samples. 169
 - Coconut butter. 519
 - Cotton seed, delinted. 97
 - Eggs, how long will keep? 256
 - Farmer's low production. 261
 - Feeding the nation. 282
 - Feeding value of wheat. 217
 - Fish, smoking fresh water. 205
 - Food problem and public. 386
 - Home canning to prevent waste. *621
 - Meat Inspection Service. 437
 - Meat, substitute for. 172
 - Milk. 109
 - Milk standards commission. 591
- Mushrooms, common edible.** *270
- Our mobilization of food.** 424
- Our waning food supply.** 94
- Peanut, feeding value of.** 116
- Pork, insufficiently cooked.** 167
- Potatoes, dried.** 543
- Preserved blood.** 173
- Soya bean, prolific.** 465
- Spoilage, preventing.** 99
- Sucrose from molasses.** 110
- What a soldier eats.** *497
- FORESTS, SEE TREES AND FORESTRY.**
- FOSSIL BONES, BANDAGING.** *360
- FRUIT.**
- Currants, machine-packed. 499
 - Date palm offshoots. 571
 - Fruit-bearing, alternation in. 465
 - Fruit fly ravages, Greece. 126
 - Orange, novel. 234
 - Orange tree fumigation. *235
- FUELS.** See also AUTOMOBILES.
- Coal is not coal, when. *585
 - Coal meter, corkscrew. *108
 - Coal pile, capacity of. *328
 - Colors applied to tanks. 151
 - Fuel economy, Netherlands. 57
 - Fuel problem. 214
 - Gasoline, danger in filtering. 391
 - Gasoline from new source. 195
 - Gasoline situation. 396
 - Gas producing plant, efficient. 197
 - Oil boiler in galley range. 443
 - Pyrometry: standard samples. 169
 - Railroad using wood fuel. 321
 - Rittman process. 380
 - Spain's new fuels. 117
 - Storehouse of sleeping energy. 101
 - "Submarines" become oil tanks. *105
 - Sublime coal. 379
- FURNITURE, GLUELESS.** *425
- GAS, CARBON-MONOXIDE.** 550
- GAS MASK FOR MANHOLES, ETC.** *206
- GAS-METER PROVERS.** 301
- GEAR WHEELS, COTTON.** *302
- GEOGRAPHY.**
- Atlantic question again. 169
 - Geographic names, Panama. 485
 - Our country and its resources. 201
 - Population of United States. *328
 - Tristan da Cunha. 163
- GEOLOGY.**
- EARTH.
 - Calcareous rocks, plants and. 77
 - Chemical geology. 391
 - Cosmophysical observatories. 586
 - Geologic names. 277
 - Geophysical investigations. 169
 - Glacial rivers, formation of. *613
 - Hudson Bay expedition. 16
 - Nature's hot air furnaces. 340
- EARTHQUAKES.**
- Barometric pressure. 81
 - Earthquakes in United States. 97
 - Formosa earthquake. 437
 - Intensity scales. 128
 - Seismology in the West. 301
- GERMANY.**
- Economic conditions. *82, *102, *122
 - Financial recovery after war. 586
 - Land of makeshifts. 117
 - Oils and fats in Germany. 518
- GOLD DREDGE, LARGEST.** *55
- GOLD DREDGING, 60 BELOW ZERO.** *555
- GOURD WITH NATURAL LID.** *205
- GRINDER, RAPID-SPEED.** *526
- GRINDING WHEELS.** 643
- GUNPOWDER. See EXPLOSIVES.**
- GUNS. See ORDNANCE AND ARMOR and RIFLES.**
- HAMMER HATCHET, MACHINE-GUN.** *136
- HAMMERS, INVERTED.** 117
- HARDWARE, OUR, IN FOREIGN MARKETS.** *392
- HEALTH. See MEDICINE AND SURGERY.**
- HEATING AND VENTILATION.**
- Furnace logic. 305
 - Pipes, freezing of. 629
 - Porus house, the. 121
 - Water heater, electric. 321
- HEN, SPEEDING UP THE.** 367
- HOUSEWIFE, STANDARDS FOR.** 370
- HYDROPLANES. See AERONAUTICS.**
- ICE CROP, HARVESTING THE.** *85
- ICE-CUTTING MOTORCYCLE.** *308
- ICE HARVESTING BY ELECTRICITY.** 197
- ICE-MAN, ELECTRIC.** *537
- ICE-RINK, ELECTRIC.** *376
- ILLUMINATION. See also ELECTRICITY.**
- Candle light for Paris. 57
 - Electrolier, adjustable. 417
 - Gas-mantle lamps rating. 217
 - Poor illumination. 321
 - Steel plant illumination. 121
- INDUSTRIAL PREPAREDNESS FOR PEACE.** 120
- INDUSTRY. See TRADE AND INDUSTRY.**
- INSECTS.**
- Frozen caterpillars thaw out. 48
 - Grasshoppers at sea. 465
 - House flies, age of. 449
 - Lady bug convention. 344
 - Novel pets: how to keep them. *306
- INVENTION AND PATENTS.**
- Court of Claims, patents in. 66
 - Court of patent appeals. 56
 - Decisions, Supreme Court. 209, 436, 441
 - German-owned U. S. patents. 518
 - Invention in the war. 416
 - Inventions new and interesting. *665
 - *106, *130, *158, *206, *255, *312, *330, *354, *378, *425, *450, *473, *529, *556, *580, *623.
 - Inventions, recently patented. *285
 - *68, *108, *132, *160, *182, *208, *240, *260, *288, *332, 350, 402, *452, *532, *558, *582, *620.

INDEX

Note.—Illustrated articles are marked with an asterisk(*). Look for the general subject rather than the supposed specific titles of articles. Thus: "Aeronautics," "Automobiles," "Meteorology," "Warfare," etc., will give related articles much more quickly than by reference to the title.

- ADVERTISING CARDS, ANIMATED** *648
- AERONAUTICS.** See also NATIONAL DEFENSE and WAR, THE EUROPEAN ACCIDENTS.
- Deploable accident. 485
 - Giant air yacht wrecked. 117
 - Quaker accident. 117
- CONSTRUCTION.**
- Aeroplane for sportman. 329
 - Autoplane, the. 303
 - Lateral balance device. 369
 - Wings, rotating disk. 109
- DIRIGIBLES.**
- Navy dirigible, non-rigid. *617
 - Super-Zeppelin, another. 117
 - Zeppelin, the unwieldy. 369
- EQUIPMENT.**
- Compass visible at night. *156
 - Fighting plane accessories. 505
 - Lightening aviator's work. *156
 - Stabilizer, electric. 437
- FLYING BOATS.**
- Folding-wing seaplane. *124
 - Hammond seaplane. 57
 - Seaplane loops-the-loop. 615
- GENERAL.**
- Aeroplanes after the war. 615
 - Aeroplanes, study of the. 450
 - Aviation in the Coast Guard. 117
 - Changing automobile bodies. *645
 - Flamingo for flying field. 257
 - Fourteen years of the aeroplane. 196
 - Future of aviation. 615
 - Hot men in the air. 376
 - Increase of production. 376
 - Pan-American Exposition. 184
 - Postal service, aerial. 437
 - Propellers, copper-plating. *393
 - Retrospect of 1916. 6
 - Sectional automobile bodies. *645
 - Weather bureau and airmen. *342
- MILITARY.**
- Aerial torpedo. *136
 - Aeroplane and submarine. 441
 - Aeroplane, huge. 615
 - Aeroplanes in United States. 217
 - Aeroplane vs. observation balloon. *104
 - American machines abroad. 485
 - American supremacy of the air. *641
 - Anti-Zep" aeroplanes. 76
 - Barlow aerial torpedo. 57
 - Hatfield planes replace soldiers. 615
 - Breaking in recruits. 309
 - Britain's bid for control of air. *422, *470, *544
 - British air fleet important. 57
 - British flying corps, strength of. 57
 - Canada's aerial armada. 485
 - Coast defenses, our aerial. *228
 - Department of Aeronautics. 575
 - Fighting U-boats from air. 489
 - Flights of U. S. Signal Corps. 217
 - Flying field for War Department. 117
 - French aeroplanes for Army. 517
 - German line can be broken. 614
 - Giant searchlight, test of. 117
 - Gun fires through hollow shaft. 615
 - Has Germany command of the air? 57
 - Japanese military maneuvers. 217
 - Kite balloons for Navy. 37
 - Lighthouse for our airmen. *423
 - Light landing, Germany. 117
 - Our eagle learns to fly. *170
 - Scenic effects, protective. 485
 - Seaplane, speeding up. *579
 - Submarine as mother ship. 485
 - Wage in air services. 485
 - Year's destruction, aeroplanes. 485
 - Zeppelins for Navy. 77
- MOTORS.**
- American-made Gnome. 217, *374
 - Rotary and radial engines. 277
 - Steam rotary motor. 369
- AGRICULTURE.**
- Agriculture in war time. 391
 - Baby tractor of great power. *323
 - Canadian bulletin. 437
 - Cattle, contagious abortion. 169
 - Cattle food; vegetable ivory. 104
 - Conservation, agricultural. 120
 - Dairy preparedness. *620
 - Electrical sunshine for farms. 437
 - Everglades, draining the. 61
 - Experiment station, Venezuela. 480
 - Farmer can win the war. 409
 - Farmer's low production. 261
 - Farming as spare-time occupation. 542
 - Fertilizer, question of. 575
 - Fertilizers and soil microbes. 129
 - Fertilizers, distribution of. 469
 - Fertilizer supplies, future. 449
 - Foot-and-mouth disease. 269
 - Garden movement suggestion. 619
 - Gardens injured by street sweepings. 519
 - Germination of French seeds. 314
 - Graphic summary, world agriculture. 485
 - Hog-cholera serum, drying. 139
 - Horticultural need. 619
 - Increasing production. 691
 - Lime, use of. 485
 - Manganese as fertilizer. 135
 - Melon fly menace. 187
 - Milk, the mechanical. 197
 - Pile, unique type of. 177
 - Potatoes as snailage. 77
 - Seed sowing, novel. *474
 - Soil surveys, United States. 65
 - Spading machine, small. *204
 - Sugar-belt labor-saving. *623
 - Tractors and the war. 600
 - Tractors, farm. *86, *285, *323, 341, *349, *388, 437
 - Tuberculosis in live stock. 151
 - Wheat, increasing yield of. 466
- ALLOY, NEW UNUSUAL.** 624
- ALLOYS, HIGH-SPEED STEEL.** 278
- ALUMINUM in Germany.** 149
- ANIMALS.**
- Armadoillo farm. 460
 - Cats, falling from. 341
 - Cattle poisoned by oaks. 98
 - Hare, "black Siberian". 257
 - Horse fountains, safety first. 96
 - Horses, Philippine. 397
 - Jungle farm for zoo boarders. *115
 - Metabolism of cold-blooded. 349
 - Novel pets: how to keep them. *300
 - Rabies among wild animals. 17
 - Reindeer, arctic, and war. 259
 - Science joins hands with art. *154
 - Snakes at close range. *449
 - Squirrels, American gray. 371
 - White mice, rearing. 399
 - Wild life protection, Canada. 387
- ARCHEOLOGY.**
- Aboriginal remains. 169
 - Maya remains, important. 354
 - Survey, archeological. 523
- ARCTIC EXPLORATION.** See EXPLORATION.
- ASPHALTIC SAND.** *326
- ASTRONOMY.**
- COMETS.
 - Encke's periodic comet. 57
 - Mellish's comet. 355, 373, 448, 554
 - Meteors from comet. 149
 - Schaumasse's comet. 465
 - Three new comets. 7
 - Wolf's Comet. 646
- EARTH.**
- Sun, earth and the. *64
- GENERAL.**
- Civil twilight. 369
 - Heavens month by month. *128, *261, *347, *448, *554, *646
 - Heavens, stereoscopic view of. 57
 - Meetings at observatories. 149
 - Optical phenomenon, novel. 301
 - Research, needs of. 369
 - Retrospect of 1916. 6
 - Sun and moon tables. 197
 - Ultra-violet light from sun. 197
 - Winter night, bright. 465
- METEORS.**
- Brilliant meteor. 543
 - Helical meteor trail. 149
 - Photographic apparatus. 369
- MOON.**
- Phases and conjunctions. *128, *264, 355, *448, *554, *646
- OBSERVATORIES.**
- Harvard College observatory. 197
- PLANETS.**
- Internal heat of planets. 353
 - Jupiter, ninth satellite of. 59
 - Jupiter, shadows of. 489
 - Jupiter's ninth satellite. 543
 - Jupiter's smallest satellite. *448
 - Mars from Jamaica. 615
 - Martian snow-caps. 257
 - Planets, the. *64, *128, *264, *347, *448, *554, *646
 - Seeking transneptunian planet. 197
 - Uranus, rotation period of. 543
- STARS.**
- Barnard's "runaway" star. 257
 - Colors of double stars. 543
 - Double star measures. 369
 - Draper catalogue, new. 615
 - Faintest known variable. 77
 - Giant stars. *534
 - Harvard Observatory's work. 465
 - Magnitudes, estimating. 543
 - Marching by the stars. 615
 - Milky Way, photographs of. 465
 - Mira Ceti, observations of. 149
 - Morning and evening stars, 1917. *94
 - Nebula N. G. C. 2261. 257
 - Nebula, remarkable variable. 57
 - Parallax of 61 Cygni. 303
 - Photographing in daylight. 369
 - Radial velocities. 465
 - Red stars, intensely. 615
 - Star colors. 197
 - Starlight and human eye. *347
 - Stellar parallaxes. 303
 - Variables, interest in. 149
- SUN.**
- Corona and prominences. 95
 - Observations in Kashmir. 615
 - Quartz Spectrograph. 646
 - Rotation measurements. 57
 - Solar-constant studies. 369
 - Sun dogs. 485
 - Sunspots and prominences. 615
 - Sunspot spectrum: new map. 448
 - Total eclipse of 1918. 257
- TELESCOPES.**
- Argentina, big telescope for. 139
 - Canada's great telescope. 543
 - Grinding reflectors. 523
 - Reflector, 100-inch. 543
- AUTOMOBILES.**
- ACCESSORIES AND RUNDRIES.
 - Accessories, new ideas in. *20, *21
 - Brake, vacuum operated. *23
 - Gear box, helical toothed. 341
 - Lubrication failures. 371
 - Measuring pump, elusive. 371
 - Recording performance. 371
 - Vaporizing gasoline today. 341
- FUELS.**
- Fuel question. 169
- GENERAL.**
- Advertising, automobile. 371
 - Ancestors of the automobile. *8
 - Automobile industry. *11
 - Automotive engineers, the. 437
 - Brakes, attention to. 341
 - Carbon, methods of attacking. 323
 - Carburetor, playing with. 277
 - Cost of maintenance. 341
 - Electric vehicle, Germany. 615
 - Exhaust gases. 261, 469
 - Garage, a help-yourself. 161
 - Gases, poisonous. 341
 - Graphite in bearings. 277
 - Guarantees. 169
 - Heavy cars on city streets. 571
 - Juvenile builder of cars. *65
 - Orphan cars. 571
 - Price list, 1917 cars. 30
 - Production, economical. 167
 - Spark plug trouble. 167
 - Timely "don't" for motorists. 116
- MOTORS.**
- Engine, trouble, elusive. 571
- FLUOR CARB.**
- Automobile's dream. 61
 - Design, trend of 1917. *12
 - Economy claims. 437
 - Electric-and-gasoline drive. *23
 - Matter of fashion. 169
 - Motoring's viewpoint. 11
 - Simple automobile, the. 571
 - Stem car, the. 81, 121
- TRUCKS.**
- Blow-out, preventing. 277
 - "Breaker strip," the. 437
 - Economy in tires. 169
 - Steel wire tires for trucks. 23
 - Tire filler, resilient. 377
- TRACTORS.**
- Baby tractor of great power. *323
 - Ball-bearing tractor. *238
 - Car of all work. *86
 - Creming grip tractor, new. *286
 - Delivering by tractor. *437
 - Electric tractor. *286
 - Farm tractor, developing. 437
 - Farm tractor opportunity. 437
 - Farm tractors, opening for. 341
 - Motor tractors and trailers. *494
 - "Tank," war. *59, *351, *423
 - Tractor for ice and snow. *376
 - Tractor that drives like horse. *498
 - Tractor-trailer ore train. *86
 - War, tractors and the. 600
- TRUCKS.**
- A matter of motor trucks. *523
 - Army requirements. 179
 - Army trucks after war. *495
 - Circus, motorized. *600
 - Combination army truck. *600
 - Cooperation of manufacturers. 390
- LOADING AND UNLOADING.** *400
- Motor-driven commercial vehicle. *86, *170, *286, *397, *498, *600
 - Motor traction in war. *486
 - Motor truck of 1917. *18
 - Petrograd-Archangel service. 136
 - Power plant, removable. *179
 - Systematic inspection, etc. *408
 - Trucks as steam shovel auxiliaries. 397
 - Trucks in building construction. 460
- USES OF.**
- Aero sleigh for Alaskan mail. 286
 - Ambulance, U. S. Army. *179
 - Pay-car body, bandit-proof. *600
 - Snow plow, unique. 286
- AVIATION.** See AERONAUTICS.
- AWARDS.**
- Bruce gold medal. 543
 - Edison medal. 519
 - Scientific American medal. 519
- BALLOONS.** See AERONAUTICS.
- BEER, HOW MADE.** *339
- BIOGRAPHY, INCLUDING OBITUARIES.**
- Dewey. 96
 - Gathmann, Louis. 591
 - McCormick, R. H. 301
 - Veeder, Dr. M. A. 387
 - Zeppelin, Ferdinand von. 277
- BIOLOGY.**
- Ethno-chemistry. 100
 - Human embryos, collecting. 341
 - Laboratory, new biological. 117
 - Marine biology in Sicily. 217
 - Survey, progress of U. S. 77
- BIRDS.**
- Bird reservations. 117
 - Canaries: color feeding. 277
 - Chicks, embryonic activity. 527
 - North American birds, new. 417
- BIRTH OF A NEW INDUSTRY.** *326
- BITUMEN, CHEMISTRY OF.** 504
- BLAST FURNACE, NEW WAY TO TAP.** *389
- BLOWER, PORTABLE ELECTRIC.** 615
- BOATS.** See MERCHANT MARINE and WARSHIPS.
- BOAT THAT SAILS ON LAND OR ICE.** *204
- BODY OUTLINE RECORDER.** *206
- BOOTS, NEW METHOD OF SOLING.** 117
- BOXES THAT STOP THEFT.** 387
- BRIDGES.**
- Concrete bridge, Iowa. *17
 - Engineering, military. *442
 - Great work well done. 368
 - Moving a big bridge. *55, *79
 - Progress in Switzerland. 295
 - Railroad bridge of grass. *124
- BRONZE STATUARY.** 417
- BUILDING CONSTRUCTION.**
- Concrete, boards of. *555
 - Girder clip, universal. *354
 - Heat-insulating efficiency. 553
 - Hollow tiles, strength of. 591, 604
 - Marble, build it in. 518
 - Model houses, Philippines. 485
 - Reconstruction materials, French. 183
 - Smoke stack construction. 301
 - Sub-surface data, New York. 343
 - Timbers, decay in. 197
- BUTTER DISPENSING DEVICE.** 417
- CALENDAR, GREGORIAN, TURKEY.** 169
- CANALS.** See also PANAMA CANAL.
- World's busiest waterway. *202
- CARBIDE, EUROPE'S SUPPLY.** 97
- CASTING FURNACE, SMALL.** *279
- CASTING, LARGEST STEEL PIPE.** *553
- CELLULOSE CEMENT, NEW.** 308
- CEMENT, PAINTED.** 152
- CEMENT, SEARCH FOR IDEAL.** 176
- CHAIN, LENGTHENING LIFE OF.** 467
- CHAIR ADJUSTABLE TO SPINE.** *378
- CHAIR, ELECTRIC MOTOR.** 571
- CHANGE, LOOSE, MACHINE.** *624
- CHEMISTRY.**
- Developments, recent. 441, 489
 - Laundry work technology. *445
 - Nothing new under the sun. 357
 - Reagent for sea chlorine. 136
 - What I can do for my country. 352
 - Women chemists in wartime. *343
- CIGAR WITH OWN MATCH.** 543
- CIVIL ENGINEERING.** See BRIDGES, ENGINEERING, ETC.
- CLOTHES FROM PEAT FIBER.** 353
- CLOTH, NETTLE FIBERS FOR.** 110
- COAL. See FUELS, AND MINES AND MINING.**
- COAL TAR AND ASPHALT.** 483
- COAL UNLOADING MACHINE.** *426
- COAST AND GEODETIC SURVEY.**
- Peevishness in Coast Survey. 139
 - Wire drag, development of. 117
- COBBLESTONE ARCH, MOVING.** *205
- COFFEE GRINDER, ELECTRIC.** *106
- COLOR-BLINDNESS TESTS.** 217
- COMB, ELECTRIC, AS HAIR DRYER.** 519
- COMETS.** See ASTRONOMY.
- COMPASSES, GYRO.** *255
- CONCRETE.**
- "Boards" of concrete. *577
 - Concrete-surface, electric. 519
 - Durability in alkali waters. 492
 - Pouring in zero weather. *17
 - Pulley, concrete. 617
 - Railroad, concreting a. *258
- COPPER, MELTING, IN IRON LADLES.** 406
- CORRESPONDENCE.** 11, 61, 81, 121, 173, 201, 153, 261, *305, *325, 373, 421, 441, 469, 489, 523, 547, 575, 619.
- COTTON.**
- Beet as a substitute. 575
 - Cotton goods, packing. 97
 - Cotton in French colonies. 285
 - Fumigating foreign cotton. *255
- CRIPPLE, WORK FOR.** 638
- CUTTER, QUICK-OPERATING.** *158
- DAM THAT NEVER OVERFLOWS.** *17
- DAYLIGHT SAVING.** 300, 301, 386, 484, 519
- DEAF, "EARS" FOR THE.** *330
- DESKS, SCHOOL, MADE NEW.** *378
- DISEASES.** See MEDICINE AND SURGERY.
- DIVER'S LOAD, LIGHTENING.** *95
- DIVINING-ROD.** 464
- DOLLS' HEADS, DRYING.** 97
- DOUM NUTS OF COMMERCE.** *129
- DYESTUFFS.**
- Coal tar dyestuffs. 509
 - Dye industry. 570
- EARTH.** See ASTRONOMY, GEOLOGY, ETC.
- EARTHQUAKES.** See GEOLOGY.
- EDUCATION.**
- Commercial science course. 415
 - Cooperation with business men. 458
 - Illiteracy in United States. 217
- EGGS BY ELECTRIC LIGHT.** 305
- ELECTRICITY.**
- ELECTRIC LIGHT.
 - Arc, alternating current. 217
 - Bicycle lamp, dual-function. 77
 - Electric lights, Mammoth Cave. *59
 - Flame carbon arc lamps. 465
 - Flashlamp battery demand. 519
 - Flood-lighting for protection. 465
 - Industrial lighting. 117
 - Lamp still fit for service. 437
 - London improvement. 341
 - Luminous efficiency of arc. 321
 - Making change by flashlight. *425
 - Pilot lamp. 417
 - Pocket lamp with own power plant. 197
- MISCELLANEOUS.**
- American goods in Porto Rico. 417
 - Bills, many are high. 543
 - Bird-grounded lines. 197
 - Cable messages by telephone. 341
 - Commutators, iron. 615
 - Concessions in Panama. 341
 - Conduit in New Zealand. 417
 - Current consumption and dust. 571
 - Current rectifier, new. 571
 - Dust, precipitation of. 301
 - Electricity prevents pipes freezing. 417
 - Electrolysis mitigation. 257
 - Electrolysis, overcoming. 97
 - Electromagnetic phenomenon. 217
 - Foreign departures. 543
 - Fire logs, electrical. 77
 - Geissler tube as cable tester. 217
 - Heating pad, new type. 197
 - High-frequency vibrations. 117
 - Hydroelectric plants in South. 437
 - Hydro-electric power, Spain. 77
 - Interrupter, high-speed. 543
 - Magnetic uniformity. 97
 - Magnet industry, England. 217
 - Motor, largest, yet built. 257
 - National electric safety code. 417
 - Portland, French. 571
 - New York Electrical Society. 97
 - Oscillation, laboratory. *512
 - Perforated, French. 571
 - Pull socket chain insulators. 77
 - Retrospect of 1916. 6
 - Rheostat, new type. *623
 - Rheostat, novel liquid. 465
 - Rheostats, two, in one. 77
 - Scrubbing machine. 147
 - Steel furnace, development of. 417
 - Steel transmission cables. 257
 - Submarine cable, high tension. 349
 - Swiss electrical industry. 197
 - Tungsten as battery element. 149
 - Weston normal cell. 321
 - Wind, electricity from the. 197
 - Women, electrical course for. 197
- RAILWAYS.**
- American cars, Barcelona. 257
 - Door operating mechanism. *5
 - Electric traction, Buenos Ayres. 97
 - Insulator for high tension. 465
 - Intersection, new shockless. 417
 - Italian electric railways. 571
 - Rail wear-gauge, novel. *66
- TELEPHONES.**
- Demand for telephone, Japan. 217
 - Making telephone more efficient. 519
 - National telephone, Panama. 225
 - Right of way. 437
 - Submarine cable, heaviest. *75, 261
 - Transmitter, improved. 341
 - Wireless telephony, Chicago. 97
- ELECTRO-PLATING, PROTECTIVE.** 526
- ELEVATOR, PORTABLE.** *599
- ENGINE, BABY GASOLINE.** *309
- ENGINEERING.**
- Retrospect of 1916. 6
 - Women in engineering. 77
- EXPLORATION.**
- Crocker Land expedition. 571, 591
- EXPLOSIVES.**
- Chemical developments, new. 391
 - Greek fire of the ancients. 137
 - India's war flower. 531
 - Kapok for explosives. 133
 - Sodium nitrate: reserve supply. 149
- EYE, NEW ARTIFICIAL.** *353
- FILTER PAPER, AMERICAN.** 465
- FIRES AND FIRE PREVENTION.**
- See also SAFETY AND TREES AND FORE-TRY.
 - Forest-fire losses. 405
 - Hose, marine fire-fighting. *624
 - How we burn up our property. 589
 - Natural gas blows fire whistle. 502
 - Searchlight, smoke-piercing. *466
 - Studies at Bureau of Standards. 255
- FISH AND FISHERIES.**
- Bureau, quarters needed for. 437
 - Disasters due to fresh water. 172
 - Halibut, "mushy". 117
 - More fish. 489
 - School of fisheries. 301
 - Trawling simplified. 205
- FLAGS FOR WARSHIPS, MAKING.** 521
- FLOOR-POLISHER, ELECTRIC.** *321
- FLY-WHEEL BURSTS, WHEN A.** *65
- FOG.** See METEOROLOGY.
- FOOD.**
- Bread from unground grain. 17
 - Bread made from hay. 102
 - Bread trust, Germany's. *102
 - Calorimetry: standard samples. 169
 - Coconut butter. 519
 - Cotton seed, delinted. 97
 - Eggs, how long will keep? 256
 - Farmer's low production. 261
 - Feeding the nation. 282
 - Feeding value of wheat. 217
 - Fish, smoking fresh water. 205
 - Food problem and public. 386
 - Home canning to prevent waste. *621
 - Meat Inspection Service. 437
 - Meat, substitute for. 172
 - Milk. 109
 - Milk standards commission. 591
- Mushrooms, common edible.** *270
- Our mobilization of food.** 424
- Our waning food supply.** 94
- Peanut, feeding value of.** 116
- Pork, insufficiently cooked.** 167
- Potatoes, dried.** 543
- Preserved blood.** 173
- Soya bean, prolific.** 465
- Spoilage, preventing.** 99
- Sucrose from molasses.** 110
- What a soldier eats.** *497
- FORESTS, SEE TREES AND FORESTRY.**
- FOSSIL BONES, BANDAGING.** *360
- FRUIT.**
- Currants, machine-packed. 499
 - Date palm offshoots. 571
 - Fruit-bearing, alternation in. 465
 - Fruit fly ravages, Greece. 126
 - Orange, novel. 234
 - Orange tree fumigation. *235
- FUELS.** See also AUTOMOBILES.
- Coal is not coal, when. *585
 - Coal meter, corkscrew. *108
 - Coal pile, capacity of. *328
 - Colors applied to tanks. 151
 - Fuel economy, Netherlands. 57
 - Fuel problem. 214
 - Gasoline, danger in filtering. 391
 - Gasoline from new source. 195
 - Gasoline situation. 396
 - Gas producing plant, efficient. 197
 - Oil boiler in galley range. 443
 - Pyrometry: standard samples. 169
 - Railroad using wood fuel. 321
 - Rittman process. 380
 - Spain's new fuels. 117
 - Storehouse of sleeping energy. 101
 - "Submarines" become oil tanks. *105
 - Sublime coal. 379
- FURNITURE, GLUELESS.** *425
- GAS, CARBON-MONOXIDE.** 550
- GAS MASK FOR MANHOLES, ETC.** *206
- GAS-METER PROVERS.** 301
- GEAR WHEELS, COTTON.** *302
- GEOGRAPHY.**
- Atlantic question again. 169
 - Geographic names, Panama. 485
 - Our country and its resources. 201
 - Population of United States. *328
 - Tristan da Cunha. 183
- GEOLOGY.**
- EARTH.
 - Calcareous rocks, plants and. 77
 - Chemical geology. 391
 - Cosmophysical observatories. 586
 - Geologic names. 277
 - Geophysical investigations. 169
 - Glacial rivers, formation of. *613
 - Hudson Bay expedition. 16
 - Nature's hot air furnaces. 340
- EARTHQUAKES.**
- Barometric pressure. 81
 - Earthquakes in United States. 97
 - Formosa earthquake. 437
 - Intensity scales. 128
 - Seismology in the West. 301
- GERMANY.**
- Economic conditions. *82, *102, *122
 - Financial recovery after war. 586
 - Land of makeshifts. 117
 - Oils and fats in Germany. 518
- GOLD DREDGE, LARGEST.** *55
- GOLD DREDGING, 60 BELOW ZERO.** *555
- GOURD WITH NATURAL LID.** *205
- GRINDER, RAPID-SPEED.** *526
- GRINDING WHEELS.** 643
- GUNPOWDER. See EXPLOSIVES.**
- GUNS. See ORDNANCE AND ARMOR and RIFLES.**
- HAMMER HATCHET, MACHINE-GUN.** *136
- HAMMERS, INVERTED.** 117
- HARDWARE, OUR, IN FOREIGN MARKETS.** *392
- HEALTH. See MEDICINE AND SURGERY.**
- HEATING AND VENTILATION.**
- Furnace logic. 305
 - Pipes, freezing of. 629
 - Porus house, the. 121
 - Water heater, electric. 321
- HEN, SPEEDING UP THE.** 367
- HOUSEWIFE, STANDARDS FOR.** 370
- HYDROPLANES. See AERONAUTICS.**
- ICE CROP, HARVESTING THE.** *85
- ICE-CUTTING MOTORCYCLE.** *308
- ICE HARVESTING BY ELECTRICITY.** 197
- ICE-MAN, ELECTRIC.** *537
- ICE-RINK, ELECTRIC.** *376
- ILLUMINATION. See also ELECTRICITY.**
- Candle light for Paris. 57
 - Electrolier, adjustable. 417
 - Gas-mantle lamps rating. 217
 - Poor illumination. 321
 - Steel plant illumination. 121
- INDUSTRIAL PREPAREDNESS FOR PEACE.** 120
- INDUSTRY. See TRADE AND INDUSTRY.**
- INSECTS.**
- Frozen caterpillars thaw out. 48
 - Grasshoppers at sea. 465
 - House flies, age of. 449
 - Lady bug convention. 344
 - Novel pets: how to keep them. *306
- INVENTION AND PATENTS.**
- Court of Claims, patents in. 66
 - Court of patent appeals. 56
 - Decisions, Supreme Court. 209, 436, 441
 - German-owned U. S. patents. 518
 - Invention in the war. 416
 - Inventions new and interesting. *665
 - *106, *130, *158, *206, *255, *312, *330, *354, *378, *425, *450, *473, *529, *556, *580, *623.
 - Inventions, recently patented. *285
 - *68, *108, *132, *160, *182, *208, *240, *260, *288, *332, 350, 402, *452, *532, *558, *582, *620.

ms:

70
94
96
97
43
73
22
9
7

9

9
1
3
4

INDEX

(Concluded from page 654)

- IRON, aluminum-coated.....357
IRON CASTINGS, seasoning.....375
IRON, commercial electrolytic.....590
IRON, PUREST.....217
- J**
JADE, HUGE MASS OF.....512
- K**
KAPOK, NEW USES FOR.....175
KITES TO STUDY WEATHER.....327
- L**
LACQUER, BURMESE.....425
LACQUER SHORTAGE IN East.....50
LAWN SPRINKLER TURBINE.....450
LEATHER FROM SHARK SKINS.....57, 321
LEATHER HIDES, measuring.....275
LEATHER, TESTING, for Govern-
ment.....493
LEGS, PAPER.....378
LETTERS, keyboard machine for
sorting.....491
LETTERS opened electrically.....615
LIBRARY, NATIONAL, SIAM.....419
LIFEBOATS, See MERCHANT MARINE.
LIGHTHOUSES, BEACONS, etc.....77
Radio equipment.....169
LINOLEUM.....204
LITHOGRAPHIC STONE, AMER-
ICAN.....302
LOCOMOTIVES, See RAILROADS.
LUMBER INDUSTRY, science in.....178
- M**
MACHINERY, high-speed, balance-
ing.....412
MACHINE WORK, diamonds in.....387
MANGROVE SHIELDS, Australia.....83
MAN, PREHISTORIC.....465
Fossil man in S. Africa.....465
Pitdown skull, a second.....465
MARINE LABORATORY, TORTU-
GAS.....341
MATHEMATICS, vast literature of.....88
MEDICINE AND SURGERY.....268
Aniline dyes, curious use for.....268
Anthrax and tannery workers.....55
Academy of Public Health.....217
Anesthetics by machine.....312
Bandages, soapbuds.....547
Birth statistics, U. S.....152
Blindness in United States.....485
Cancer statistics.....77
Condenser discharge and muscles.....149
Disinfectant, portable.....119
Electrical treatment of wounded.....149
Electro-therapeutics.....230
Eyes, borax for.....81
Eyes, heat ray protection.....591
Eyes, proper goggles for.....387
Infantile paralysis.....577
Life tables, United States.....315
Malaria germ in winter.....195
Malaria in United States.....277
Measuring surface of body.....369
Menigitis, cerebrospinal.....519
Miners' consumption.....97
Mobilizing our medicine.....550
Motion pictures and eyestrain.....97
Paper money, perils of.....235
Peat cotton for wounds.....618
Pellagra, transmissibility of.....152
Physiological query.....619
Pitman poisoning.....571
Stretcher, double-deck.....343
Suture manufactory.....248
Thermometers, clinical.....277
Trauma hospitals.....85
Trench foot.....321
War's toll of medical men.....519
What to wear and how.....591
When the surgeon sews.....198
Wounded, electric treatment of.....571
Wounds, precision in treatment.....124
- MERCHANT MARINE.....619
Air cushion for ship.....619
American merchant marine.....345
Anti-submarine protection.....547
Bulkheads vs. torpedoes.....547
Elevators, electric, for ships.....321
Emergency fleet, building.....488
Foreign trade, our shipping and.....489
German merchant fleet.....238
Guns for merchantmen.....301
Lifeboat, collapsible.....199
Local time on shipboard.....543
Machinery of ships.....221
Manning our merchant marine.....570
Navigation in Kara Sea.....216
Rate, destruction of.....216
Repairing German ships.....597
Rolling, to prevent.....371
Safety of ships at sea.....490
Sails vs. coal.....519
Shallow-draft ships.....619
Small ships and the submarine.....276
Smoke-screen vs. submarine.....587
Standard ships.....542
Stokers, electrical eye for.....265
Submersible answer to submarine.....552
Submersible freighter.....518
Torpedo-proof ships.....578
Wooden ships and worms.....592
- MERIDIAN, determining true.....328
METAL PARTS, new process.....40
METAL SHEETS, workability of.....527
METAL SUBSTITUTES, CHEAP.....387
- METEOROLOGY.....342
Airmen and the Weather Bureau.....342
Aurora, permanent.....264
Australian record.....15
Barometers, Zeppelin.....472
Fog, increased amount of.....155
Fog, new studies of.....119
Forecasting weather from aero-
plane.....160
Lightning conductors.....257
Mercury, magnetic damping of.....237
Meteorological service, Turkey.....117
Meteorology in the war.....76
Observatories, magnetic.....175
Storms, our tropical.....180
Weather kites.....327
- MICROBE, how a, grows.....622
- MILITARY ARTS, See WARFARE.
WAR, THE EUROPEAN, etc.....275
- MILK BOTTLES OF PAPER.....275
- MINERALS, ARTIFICIAL.....157
- MINES AND MINING.....217
Ambulances, electrically heated.....217
Coal, machines for mining.....348
Coal, sub-aqueous mining of.....98
Deepest mine in world.....465
Gold dredge, largest.....485
- Minerals of Far East.....387
Rescue truck, auto.....397
Tractor-trailer train for ore.....596
What I can do for my country.....598
- MOLYBDENUM in United States.....117
- MOON, See ASTRONOMY.
- MOTORBOATS, See WARSHIPS.
- MOTORCYCLES.....204
Cycling in the snow.....204
Ice-cutting machine.....308
Lighting generator.....437
Miniature closed car.....105
- MOTORS, INTERNAL COMBUS-
TION.....416
- MOUNTAINEERING.....341
- MOVING PICTURES.....306
Camera and projector for home.....306
Have moving pictures changed us?.....105
Paper films for home use.....105
Pictures in color and relief.....130
Projector that is different.....130
Spectacles for "movies".....354
Suit-case projector.....354
Warfare, generals of shadowland.....446
- MUSHROOMS, common edible.....370
- N**
NATIONAL DEFENSE, See also
AERONAUTICS, NAVAL AFFAIRS, OR-
DNANCE AND ARMOR, WARFARE, WAR-
SHIPS, etc.....228
Aerial coast defenses, our.....228
Army of 1,200,000 men.....387
Battle of the Caribbean.....387
Call for instant action.....300
Citizenship and preparedness.....96
Coast defense, mobile.....435
Congress and national defense.....148
Contribution of big business.....519
Disarmament again.....373
German-American clubs.....368
Government expert and lay.....196
Great emergency.....464
Industrial man power.....300
Industrial mobilization, our.....220
Our country and its resources.....201
President's war message.....368
Protective pessimism.....542
Railroads, operation of.....519
Removal of Major-General Wood.....328
Reserve army, popular.....365
Retrospect of 1916.....6
Sound unprotected.....373
Submarines and our harbors.....148
Universal training popular.....387
Volunteer system in disaster.....352
What I can do for my country.....598
396, 444, 530, 592
- Work of Council and Advisory
Commission.....595
- NATURAL HISTORY, Museum of.....485
- NAVAL AFFAIRS, See also NATIONAL
DEFENSE, WARSHIPS, etc.....552
Artists helping Navy, our.....552
Base in the Columbia River.....387
Billion dollars for Navy.....387
"Cafeteria, the 12-minute".....466
Competitive bidding at a disad-
vantage.....77
Harbors, deepen the.....387
Navy yards, retention of.....301
Our country and its resources.....201
Proposed orphan naval school.....61
Recruiting, improvement in.....301
Shell contract invalidated.....301
Ship draftsmen wanted.....389
Telescope, 40-power.....493
- NEWSPAPERS, names in the.....464
- NITROGEN, American sources of.....394
- NITROGEN FIXATION A FACT.....373
- NOTES AND QUERIES.....40, 142, 162,
188, 362, 382, 605, 631
- NUTS, LUMBANG.....571
- O**
OILS, lubricating, wasted.....48
OILS, REFINING.....105
- ORDNANCE AND ARMOR, See
also WARSHIPS.
ARMOR.....474
Bullet-proof armor.....474
Gun versus armor.....346
- GENS.....570
Accident on "Mongolia".....570
Anti-aircraft gun.....393
Artillery, heavy mobile.....236
Big gun supreme.....305
Chain shot, why not revive.....305
Coast-defense gun, new.....224
Hottest made by woman.....615
Machine gun, electric.....615
Machine gun, new styles.....104
Machine guns by thousands.....62
Mortars, light-weight trench.....553
Navy practice, long-range.....77
Ordnance and preparedness.....174
Our artillery, our allies.....436
Periscope-mount machine gun.....450
16-inch, manufacture of.....346
Submarine chaser gun.....523
Tuning fork: ordnance tests.....257
- PROJECTILES.....385
Ammunition, packing of.....385
Chain-shot.....469
Grinder recovers shells.....591
Incendiary bullets for aircraft.....149
Navy ammunition.....591
Shells, those armor-piercing.....116
Shrapnel, jacketed.....184
Torpedoing enemy trenches.....463
- PACKAGES, RIGHT-WEIGHT.....330
- PAINTING, cost finding in.....321
- PAINTS, acid resistance of.....571
- PANAMA CANAL.....147
Facts about the Canal.....147
Salt water climbs locks, how.....551, 614
- PAPER.....629
Mercerized cotton paper.....629
New woods for paper pulp.....593
Paper pulp from hemp buds.....127
Paper trine, yam, etc.....629
Railroads to sell old paper.....197
Saving waste paper, England.....57
Spinach, paper from.....485
- PATENTS, See INVENTION AND
PATENTS.....440
PHILIPPINES.....77
Lighthouses.....77
Sanitary commissions.....97
- PHONOGRAPHS.....543
Microphone on phonograph.....543
Phonograph flashlight.....106
- PHOTOGRAPHY, See also MOVING
PICTURES.....329
Aviation gun-camera.....329
Deep-sea electric camera.....483
Exposure, camera that gives.....556
Moonlight photography.....619
- PHYSICS.....369
Earth currents, vertical.....369
Isotasy.....321
Mountain, what holds, in place.....378
- PIPE, CAST-IRON.....150
- PLANTS, See also AGRICULTURE.
Cactus, treatise on.....441
Cinchona botanical station.....369
Digitalis, American.....417
Ecological studies.....543
Evergreen: duration of leaves.....417
Growth measurements.....399
Injury by illuminating gas.....417
Plants that water themselves.....492
Register for varieties.....590
Roots' oxygen requirements.....369
Vegetable partnership.....125
Vegetation map of U. S.....598
Wild flower, most fragrant.....369
- PLATINUM IN SPAIN.....571
- PLATINUM JEWELRY, peril of.....542
- POLICEMAN'S CLUB makes re-
volver into rifle.....309
- POLISHING SMALL OBJECTS.....543
- POPULATION, U. S. and possessions.....328
- PORCELAIN INDUSTRY, Chinese.....321
- POTASH.....351
As by-product of cement.....351
Banana, potash from.....571
Blast furnace, potash from.....571
Potash from sand-hill lakes.....167
Potash in prickly pear.....58
Sage brush, potash from.....387
- PREPAREDNESS, See NATIONAL
DEFENSE, TRADE AND INDUSTRY,
AGRICULTURE, etc.....605
- PRISON, MODEL, Illinois.....605
- PROJECTILES, See ORDNANCE AND
ARMOR.....474
- PROTRACTOR, SPIRIT-LEVEL.....158
- PUBLICATIONS, TAX ON.....484
- PYROMETER TUBES.....57
- R**
RAILROADS, See also ELECTRICITY.
Air and car supply.....301
Cable railway, military.....537
Car, making the, safer.....467
Concreting a railroad.....258
Defenses against winter.....124
Double-tracking railroad.....637
Electrical shunting, early.....257
Electric lift bridges.....157
Finnish and Swedish railways.....281
Freight-carrying increased.....387
Freight cars, saving.....299
Hand car, engine for old.....417
Hudson Bay Railroad.....418
Lehigh Valley improvements.....257
Locomotives that came back.....442
Military engineering.....185
Munster Railway, Russia.....185
Passes, issuance of.....301
Safety first films.....485
Ship frame ties up road.....597
Signs for locomotive controls.....57
Switch, telegraphic, for cars.....580
Switch, safety.....109
Track inspection periscope.....622
Tracks wear out, why.....387
Trespassing on tracks.....387
- RAILROADS, ELECTRIC, See ELEC-
TRICITY.....379
- REFRACTORIES, SPINEL.....379
- RETROSPECT OF YEAR 1916.....6
- RIFLE, THE.....519
Enfield adopted by U. S.....519
Military practice, German.....126
Military rifle, "harmless".....106
Military rifle, new.....474
Missile velocities.....60, 325, 523
Periscope-sight army rifle.....354
Sights, illuminated.....308
- RIVERS, formation of glacial.....613
- ROADS.....389
Concrete roads, extent of.....389
Federal aid in fighting mud.....14
Heavy vehicles and roads.....97
Indiana protects its roads.....97
Non-skid streets.....309
Old sidewalks at new grades.....389
Paving brick from slag.....460
Road building, a point in.....277
Road making reflections.....325
State convicts, use of.....623
Street flusher, two-motor.....623
- ROMANCE OF THE UNSUS-
PECTED.....550
- ROW BOAT POWER PLANT.....265
- RUBBER.....89
Gusuly cultivation.....341
Rubber tire substitutes.....89
- RUSSIA, natural resources of.....543
- RUST removed electrically.....44
- S**
SAFETY, See also FIRES AND FIRE
PREVENTION, MERCHANT MARINE,
AND MINES AND MINING.....387
Compressed air, misuse of.....387
Gas-Safety Code, national.....257
Glove and shield combined.....591
Hydrocyanic gas, animal indica-
tors for.....519
Scientific American medal award.....467
Sieves and ties a danger.....591
Why hand-rails on stairs?.....591
- SALT, new sources of common.....185
- SALTON SEA.....415
- SALVING a big ship.....350
- SAND-BLAST ROOM, NEW.....580
- SCIENCE.....154
Art, science joins hands with.....154
British and Russian cooperation.....593
Congressional appreciation.....276
Gravity over Indian Ocean.....217
Institute for history of science.....417
International catalogue.....172
In the cause of science.....153
Livingstone relics.....485
Mountain laboratory.....485
Munsterberg's library.....387
New York's museums.....151
Pacific Division, A. A. S.....321
Pressing problems unsolved.....590
Research at Cambridge.....369
Retrospect of 1916.....6
- SCIENTIFIC AMERICAN.....441
Acknowledgment, no.....441
Commercial queries, Department
of.....440
Complaint from "American".....421
Mississippi River Bill.....441
Scientific American medal award.....467
- SCOLLOP CUTTING MACHINE.....130
- SCRUBBING BY ELECTRICITY.....330
- SELENIUM CELL, sensitive.....465
- SET SCREW, extracting broken.....417
- SHIPS, See MERCHANT MARINE and
WARSHIPS.....619
- SHOE-SHINING DEVICE.....417
- SHOES, WOODEN, in use today.....349
- SHORTHAND FOR CHINESE.....138
- SINKING OF "LIEBENFELS".....367
- SKATER'S LIFE-SAVER.....308
- SKATES, ROAD.....285
- SKATE THAT GROWS WITH
FOOT.....308
- SKATING RINK, PORTABLE.....385
- SMOKING mental effects of.....460
- SOAP MAKING, rapid fire.....453
- SOLDERS CONTAINING NO TIN.....378
- SPONGES FROM RUBBER.....353
- SPONGING, SCIENTIFIC.....490
- SPORTS, WINTER.....308
- SQUASH, growing force of.....492
- STAGE FURNITURE, pneumatic.....205
- STANDARDS, BUREAU OF.....584
- STARS, See ASTRONOMY.
- STEAM SUPPLY, CENTRAL.....371
- STEEL ALLOYS, high-speed.....278
- STEEL, crystallization of.....129
- STEEL, new refractory.....613
- STEEL, NEW STAINLESS.....329
- STEEL, segregation in.....157
- STEELS, molybdenum in.....116
- STEEL, spinning threads of.....278
- STEEL, temperature in making of.....653
- STORMS, See METEOROLOGY.
- SUBMARINES, See WARFARE, WAR-
SHIPS, and WAR, THE EUROPEAN.
- SULPHUR FROM SMELTER
GASES.....375
- SUN, See ASTRONOMY.
- SURGICAL SEWING MACHINE.....648
- T**
TAP MAKING: a new idea.....301
- TAX ON PUBLICATIONS.....484
- TELEPHONES, See ELECTRICITY.
- TEXTILES.....353, 624
Feet fiber fabrics.....353, 624
Tinting-needle textiles.....556
Waterproof cloth, new.....353
- THERMOMETER, fault of the.....205
- TIN, Germany saves her.....117
- TIN PLATE: cost of living.....313
- TIN PLATE IN ROLLS.....466
- TIN SMELTER and Panama Canal.....419
- TOOLS ON STILTS.....312
- TOOLS, THREE IN ONE.....648
- TOOTH-BRUSHES, ROTARY.....543
- TORPEDO, MODERN AUTOMO-
BILE.....548
- TRACTORS, See AUTOMOBILES.
- TRADE AND INDUSTRY.....520
Army uniforms by the millions.....520
Chemical business with France.....485
Compensation, preparedness.....176
Compensation legislation.....176
Critics of our profits.....277
Cuba for electrical goods.....203
Export enterprise, American.....148
Factory, rapid transit in.....282
Footwear, old, in foundry.....321
Foreign Commercial Notes.....458, 506, 606
Generals of industry.....570
Government-helped foreign trade.....284
Maps, neglect of.....321
Mechanic and skilled workman.....530
National laboratory of industry.....201
Our country and its resources.....201
Pencil holders save money.....485
Postures at work.....281
Remuneration of industry.....281
Science and our industries.....168
Technical library, German.....57
Time clock: high speed.....359
War and business.....590
War and economic conditions.....178
War cripples and indemnity.....216
When women take men's places.....591
When worker lays down arms.....96
Where science comes to aid.....172
Woman in the industries.....127
Work mobilization, Germany.....122
- TRADE-MARKS, See INVENTION
AND PATENTS.....474
- TRAFFIC COP, protecting the.....129
- TREES AND FORESTRY.....158
Forest fires, statistics of.....158
Insects and forest fires.....139
National forest enlarged.....360
New woods for paper pulp.....627
War, lumber for the.....627
Woods called "mahogany".....257
- TRUCK, NOVEL SHOP.....599
- TUNGSTEN, BRITISH.....377
- TUNNEL, Hudson River.....58
- TYPE-CASTING for small printer.....426
- TYPEWRITER TESTER.....130
- U**
UNLOADER, MECHANICAL.....426
- V**
VALVE, TWO-WAY.....543
- VENTILATION, See HEATING AND
VENTILATION.....302
- VISCOSITY, UNITS OF.....302
- VOLCANOES, See GEOLOGY.
- W**
WARFARE, See also NATIONAL DE-
FENSE, WARSHIPS, WAR, THE EURO-
PEAN, AERONAUTICS, etc.....416, 421
American invention in war.....416, 421
Barbed wire "shooter cutter".....195
Blockading the blockaders.....454
Blockading with nets.....547
Cost of modern warfare, stagger-
ing.....517
Electricity and submarine prob-
lem.....519
Engineering, military.....524
Incendiary rockets.....329
Marching, mechanics of.....551
Military census, Connecticut's.....280
Motor traction in war.....486
Submarine, coping with the.....541
Subs, firing for.....619
Torpedo, modern automobile.....548
- WARSHIPS, See also NATIONAL DE-
FENSE, NAVAL AFFAIRS, ORDNANCE
AND ARMOR, and WAR, THE EURO-
PEAN.....216
BATTLESHIPS.....233
America and Germany compared.....233
American warship design.....421
Anchor, largest, ever made.....623
Armament, a question of.....51
Battle-cruiser controversy.....183, 175,
201, 261
Battle-cruisers, grave defect in.....232
Battle-cruisers, our new.....61
Battle of the Caribbean.....226
Battleship and protectors.....150
"Big-gun ship," development of.....230
Capital ships of Germany.....235
Capital ships, U. S. Navy.....234
Colorado class.....16
Destroyer and torpedo.....219
- Electric drive, vulnerable.....460
Fatal defect in battle-cruisers.....160
Geared drive, full power reverse.....303
Geared drive in large ships.....303
Largest casting for largest ship.....233
Largest possible battleship.....237
Machinery of ships.....221
Monitor in a seaway.....205
"North Dakota," working model
of.....276
Plunging fire and construction.....230
Private shipyards.....76
Relative efficiency.....320
Scientific American and Navy
Department.....216
Shipbuilder and Navy program.....149
Ship that will never sail.....569
Unarmored battleship, the.....216
- SUBMARINES.....216
American-built sub for Spain.....216
Anti-submarine device.....235
Anti-submarine strategy.....639
Attack and defense.....519
Baby submarine, Ford's.....151
"Deutschland".....216
Filling the U-boat.....216, 222, 226,
276, 325, 377, 436, 464, 472, 484,
488, 518, 547, 552, 575, 578, 591,
599, 614, 616, 619
From North Sea to Atlantic.....236
Great emergency, the.....464
Holland submarine development.....223
Ideal submarine.....59
Multi-tubular submarine.....415
N-type, launching of an.....449
Our inadequate submarine.....229
Salvage, emergency.....639
Smoke-screen defense.....236
Submarine as mother ship.....236
Submarine problem.....572, 596, 616,
644
Torpedo nets.....575
U-boat menace.....486
- SUNDRY.....222
Anti-submarine patrol.....222
Canal gunboat "Aramis".....222
Oil-engineered yacht "Aramis".....216
Scout patrols.....216
Sea-raider vs. submarine.....416
Submarine chaser: fast.....305
Submarine swatter.....438
Wind resistance of ships.....301
- WAR, THE EUROPEAN, See also
ORDNANCE AND ARMOR, WARFARE, and
WARSHIPS.....216
Aerial losses of Allies.....217
Aerial propaganda.....369
Aeroplanes attack railroads, how?.....217
Aircraft cooperation.....169
Airmen, allied, in Rumania.....169
Another year of war likely.....301
Barrel-like home.....597
Bath tub at the front.....301
British navy personnel.....301
Burrows of the German Army.....460
Civil engineer, war and.....464
Closing the North Sea.....614, 616
Cripple, work for the.....536
Destruction of war short-lived.....614
Engineering of Teutons.....443
Engineering viewpoint.....638
Feeding the armies.....463
German aviators more daring.....277
Germany's 3,000,000 prisoners.....72
Grain supply, German.....573
Guarantees for permanent peace.....61
Guns, concealment of.....167
Helmet, French, resistance of.....460
Helmet, sniper's.....385
If United States should war.....169
Interdependence of fronts.....169
Kaiser, narrow escapes of.....169
Light of a match.....259
Medals, satirical.....628
Milling plant, portable.....381
Mine layer in action.....251
Munitions output, growth of.....149
Names in newspapers.....464
Overproduction of munitions.....149
Pumping plant for trenches.....633
Retrospect of 1916.....6
Rumania and U-boat war.....469
Russian, seaports in Arctic.....307
Scenic painter in war.....597
Sea fight, old time.....621
Shell expenditure.....625
Shelter, Red Cross.....167
Shipbuilder vs. submarine.....149
Shipping losses, German.....519
Sinking of "Liebenfels".....267
Soldiers who fight underground.....579
Starvation of England.....329
State of war, a.....593
Strategic moves of the.....10, 90,
100, 152, 200, 280, 304, 336,
344, 372, 390, 420, 440, 466,
522, 546, 574, 594, 618, 642
Submarine effort, Germany's.....340
"Tank," one-man.....443, 467
Terrorizing neutrals.....387
Torpedoing trenches.....463
Torpedo net and its prey.....377
Trench gun, noiseless.....265
U-boat peril, great.....473
U-boat victim.....486
Women as engine builders.....445
- WASHROOM, TECHNOLOGY OF.....445
- WASTE, OUR NATIONAL.....535
- WATER POWER AND SUPPLY.....267
Fresh water from ocean.....267
Public water supplies.....469
- WEATHER, See METEOROLOGY.
- WEIGHTS AND MEASURES.....351
- WELDING STEELS.....167
- WHAT I CAN DO FOR MY COUN-
TRY.....352, 396, 444, 530, 598
- WILL O' THE WISP.....261
- WINCHES, portable electric.....275
- WIRE-DRAWING.....267
- WIRELESS TELEGRAPHY.....466
Amateurs and the war.....276
Amateur wireless the good of.....276
Apparatus, sensibility of.....341
Clandestine stations.....340
Electric arc in wireless.....116
Government ownership.....169
Lighthouse equipment.....119
Motor truck station.....615
Navy's new station.....615
Philadelphia station, new.....615
Radio inspector as detective.....381
Radio telegraph in 1916.....671
Spanish ships, wireless for.....69
Stations, new, Colombia.....463
Warlike apparatus.....267
Wireless and Irish rebellion.....87
- WOOD, preserving, from insects.....45
- WOOD SEASONING, new method.....45
- X**
X-RAY IMAGES.....618
- Y**
YARNS, determining true length.....588
- Z**
ZEPPELINS, See AERONAUTICS.
- ZOOLOGICAL NOMENCLATURE.....169

